MARSHALL
HEALTH CLINIC

Alaska Rural Primary Care Facility
Code and Condition Survey

February 16, 2005

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I. Executive Summary

Overview:

The Marshall Clinic, built in 1990, is a 1720 SF clinic of somewhat typical design for the time it was constructed. It was originally built as a 24 x 40 building, with an addition of 24 x 28, and a 70 sf unheated vestibule. The arrangement is very difficult since the lobby was at one end of the clinic in the original building and is now in the middle of the clinic with the addition. This situation requires patients and visitors to pass all the clinical space including exam rooms to get to the lobby. It has very small waiting area, a larger exam room/trauma room, two other exam rooms, one small office, toilet/bath, kitchen, TDY room, medical files and medical supply room, janitor, storage, and mechanical room. The simple wood frame construction on a pony wall system over a gravel pad is similar to many clinics constructed in the YKHC region over the last 20-30 years. It has been modified due to heating problems with all exposed internal piping, and is small for the current size of the village, 349 residents.

Renovation/Upgrade and Addition:

The Clinic will require a 280 SF addition to accommodate the current need and Alaska Rural Primary Care Facility space guidelines. This addition, is not possible on the existing site, and the existing facility is already in code violation when the additions were made with proximity to property line. The addition would require considerable additional pad filling and substantial renovation of the existing clinic. As can be seen from the documentation enclosed, the existing clinic will require major renovation to meet current code and standards as well. The cost of renovation and addition will far exceed the cost of a new clinic facility.

New Clinic:

The community has proposed that a new larger 2000 SF Denali Commission Medium Clinic can be constructed on a new site, of which there are a couple of choices. We have not included preliminary site plans because the site has not be chosen.

All of the sites have existing city utilities available to them and can be served easily. The mayor of Marshall, Ray Alstrom, is in process of final determination of the final site selection and should have this complete in the next couple months.

The community has completely supported this effort and have met extensively to assist in new site issues and to resolve any site considerations of the three options presented.

II. General Information

A. The Purpose of the Report and Assessment Process:

ANTHC has entered into a cooperative agreement with the Denali Commission to provide management of the small clinic program under the Alaska Rural Primary Care Facility assessment, planning, design and construction. Over 200 clinics will be inspected through the course of the program. The purpose of the Code and Condition survey report is to validate the data provided by the community in the Alaska Rural Primary Care Facility Needs Assessment and to provide each community with a uniform standard of evaluation for comparison with other communities to determine the relative need between the communities of Alaska for funding assistance for the construction of new or remodeled clinic facilities. The information provided in this report is one component of the scoring for the small clinic RFP that the Denali Commission sent to communities in priority Groups 3 and 4. The information gathered will be tabulated and analyzed according to a set of fixed criteria that should yield a priority list for funding. Additionally, the relative costs of new construction vs. remodel/addition will be evaluated to determine the most efficient means to bring the clinics up to a uniform standard of program and construction quality.

A team of professional Architects and Engineers traveled to the site and completed a detailed Field Report that was reviewed by all parties. Subsequently, the team completed a draft and then final report of the facility condition.

B. Assessment Team:

Tom Humphrey, Capital Projects Director, and Emilee Kutch, the administrator for Yukon Kuskokwim Health Corporation, organized the assessment team. The team for this site visit was Tom Humphrey, YKHC; Gerald L. (Jerry) Winchester, Architect, Winchester Alaska, Inc.; Bob Jernstrom, PE, Jernstrom Engineering, and Matt Reardon, ANTHC. Team members who assisted in preparation of report from information gathered included members of the field team above and Ben Oien PE, Structural Engineer; Tom Humphrey, PE, Electrical Engineer; Carl Bassler PE, Civil Engineer; and Estimation Inc.

C. Report Format:

The format adopted is a modified “Deep Look” format, a facilities investigation and condition report used by both ANTHC and the Public Health Service, in maintaining an ongoing database of facilities throughout the country. Facilities are evaluated with respect to the requirements of the governing building codes and design guidelines. Building code compliance, general facility condition, and program needs have been evaluated. The written report includes a floor plan of the clinic, site plan as available, and new plans for renovation/upgrade or completely new clinics. Additional information was gathered during the field visit which includes a detailed Field Report and building condition checklist, sketches of building construction details, investigations of potential sites for new or replacement clinics, and proposed plans for village utility upgrades. This information is available for viewing at ANTHC’s Anchorage offices and will be held for reference.

D. The Site Investigation:

On October 26, 2001, the team flew to the site and made observations, took photos, and discussed the needs with on-site personnel for the facility. Approximately three-four hours was spent on site, with sufficient time to investigate foundations, structure, condition, mechanical and electrical systems, and to interview the staff to assess current and projected health care needs.

Interviews were conducted with the Ray Alstrom, of the City of Marshall, Ruth Fitka, CHP, Francien Evan CCT, and other Health Aides. The city staff provided information on the existing building, site, and utilities. Additional review of existing data from YKHC files from physician's assistants, community health aides, travel clerks, dentists, specialty clinic providers, and medivac teams. These interviews provided clear understanding of the needs of the village, the clinic facility, and the users of the facility.

The Marshall Mayor has reviewed the use of a Denali Commission Medium Health Clinic design adapted to one of the two Marshall Sites. He has agreed to proceed with final approvals of a site based on final determination of the most appropriate one.

III. Clinic Inspection Summary

A. Community Information:

Population: 349 (2000 Census)
2nd Class City, Unorganized Borough, Lower Yukon School District, Calista Native Corporation

Location:
Marshall is located on the north bank of Polte Slough, north of Arbor Island, on the east bank of the Yukon River in the Yukon-Kuskokwim Delta. It lies on the northeastern boundary of the Yukon Delta National Wildlife Refuge. It lies at approximately 61d 53m N Latitude, 162d 05m W Longitude. (Sec. 27, T021N, R070W, Seward Meridian.) Marshall is located in the Bethel Recording District. The area encompasses 4.7 sq. miles of land and 0 sq. miles of water. The climate of Marshall is maritime with temperatures ranging between -54 and 86. Average annual rainfall measures 16 inches. Heavy winds in the fall and winter often limit air accessibility. The Lower Yukon is ice-free from mid-June through October.

History:
An expedition came upon an Eskimo village at this site in 1880, called "Uglovaia." Gold was discovered on nearby Wilson Creek in 1913. "Fortuna Ledge" became a placer mining camp, named after the first child born at the camp, Fortuna Hunter. Its location on a channel of the Yukon River was convenient for riverboat landings. A post office was established in 1915, and the population grew to over 1,000. Later the village was named for Thomas Riley Marshall, Vice President of the United States under Woodrow Wilson from 1913-21. The community became known as "Marshall's Landing." When the village incorporated as a second-class city in 1970, it was named Fortuna Ledge, but was commonly referred to as Marshall. The name was officially changed to Marshall in 1984.

Culture:
Marshall is a traditional Yup'ik Eskimo village. Subsistence and fishing-related activities support most residents. Members of the Village of Ohogamiut also live in Marshall. Sale, importation, and possession of alcohol are banned in the village.

Economy:
Marshall has a seasonal economy with most activity during the summer. Fishing, fish processing and BLM fire fighting positions are available seasonally. 33 residents hold commercial fishing

permits. Subsistence activities supplement income. Salmon, moose, bear, and waterfowl are harvested. Trapping provides some income.

Facilities:

Water is derived from five wells. Two wells were completed in 1991. Approximately 70% of the City (60 homes) are served by a piped circulating water and sewer system and have full plumbing. The remainder haul water and use honeybuckets. Funds have been requested to expand to the remaining unserved 19 homes and the fish processing plant, and to replace the older portion of the system installed in the late 1970s. A new landfill and access road were completed in 1997, and the City has begun a refuse collection service.

Transportation:

There are no roads connecting to Marshall, so access is primarily by air or water. A State-owned 1,940' gravel airstrip is available. Funds have been provided to relocate the airport. The community is serviced by barge. Many residents have boats, and in winter they rely on snow machines and dog teams.

Climate:

The climate of Marshall is maritime with temperatures ranging between -54 and 86. Average annual rainfall measures 16 inches. Heavy winds in the fall and winter often limit air accessibility. The Lower Yukon is ice-free from mid-June through October.

B. General Clinic Information:

Physical Plant Information:

The existing Marshall Health Clinic completed in 1990 occupies 1720 sq. ft. (See attached Plan) It is one of the medium size clinics constructed during the last twenty years and existing in the YKHC program area. It has small a waiting room, toilet/bathroom, janitor/supply room, trauma/exam room, two other full exam rooms, office work area, a small supply storage area, kitchen, TDY, medical supply storage, and an mechanical room. It has a front entry with unheated vestibule but does not allow stretcher access. The rear entry has not compliant ramp and stair to the trauma/exam room, The clinic is served with water and sewer from existing water and wastewater systems for the village. Sinks are provided in the three exam rooms, toilet/bathroom, and the janitor room.

Clinic program usage information:

Patient records indicate that the clinic saw an average of 360 patients per month in 2000 up from 180 in 1999 and 170 patients per month in 1998. This is a 100% increase on an annual basis. There are 3 full or part time staff and 1 Itinerant or contract staff equivalent. The office space provided is entirely inadequate as it has all office functions, travel, files, and use by all health aides. The room contains a desk, copier, fax, and two chairs for triage and other equipment and supplies.

Community Program Sheet:

The community program sheet P1.0 Services has been included if available on the next page. These sheets were completed during the Code and Condition Survey by ANTHC representative.

C. Program Deficiency Narrative:

1. Space Requirements and Deficiencies:

Space Comparison Matrix - Current Marshall Actual SF to Denali Commission Medium Clinic
Alaska Rural Primary Care Facility

	Current Clinic			Medium clinic					
Purpose / Activity	**Actual Net SF**			**ARPCF SF**			**Difference**		
		No.	**Net Area (SF)**	**Size**	**No.**	**Net Area (SF)**	**Size**	**No.**	**Net Area (SF)**
Arctic Entries	70	1	70	50	2	100			30
Waiting/Recep/Closet	183	1	183	150	1	150			-33
Trauma/Telemed/Exam	200	1	200	200	1	200			0
Office/Exam	120, 105	2	225	150	1	150			-75
Admin./Records	69	1	69	110	1	110			41
Pharmacy/Lab			0	80	1	80			80
Portable X-ray			0			0			0
Specialty Clinic/Health Ed/Conf			0	150	1	150			150
Patient Holding/ Sleeping Room	147	1	147	80	1	80			-67
Storage	40, 109, 55, 136	4	340	100	1	100			-240
HC Toilet	30	1	30	60	2	120			90
Janitor's Closet	40	1	40	30	1	30			-10
Subtotal Net Area			1304			1270			-34
Circulation & Net/Gross Conv. @ 45%			364			572			208
Subtotal (GSF)			1668			1842			174
Mechanical Space @ 8%			52			147			95
Total Heated Space			1720			1989			269
Morgue (unheated enclosed space)				30	1	30			30
Ext. Ramps, Stairs, Loading	As Required			As Required			As Required		

a. Overall space deficiencies: The size of the facility is about 280 sf short of the ARPCF space requirements.

b. Specific room deficiencies: There is minimal vestibule, small waiting space, minimal office and storage space. This in combination with other small spaces leaves the clinic very program deficient.

c. Other size issues: Mechanical room is very small, and there are no unheated or exterior storage areas, and circulation is through rooms such as trauma to get to second exit.

2. Building Issues:

a. Arctic Entries - The main entry in not accessible for ADA and is impossible to get a gurney into the room. It does not have a legal ramp and has storage of needed materials that cannot be stored inside the facility due to lack of room. The rear entry has a stair and access but does not meet ADA or standards for gurney access.

b. Waiting / Reception –The waiting area contains a couch for secondary patient use and has equipment and other items stored in the room.

c. Trauma/Telemed/Exam – There is a trauma room however, it does not meet all aspects or requirements. There are three total rooms that are used for exam or some combination.

d. Office / Exam – There are two exam rooms, which are crowded with equipment. One has access to the mechanical room through the exam room. There was no capability of putting a patient in a gurney in the exam rooms.

e. Administration / Records – There is one office room space used for all administrative, records, scheduling, and other functions. It is very small.

f. Pharmacy / Lab – There is no Pharmacy and medicines are stored in locked cabinets in the medical supply room.

g. Specialty Clinic / Health Education / Conference - This function is completed in the exam rooms. There is no special area.

h. Patient Holding / Sleeping Room – There is a sleeping room and a rollaway bed for itinerant staff. The exiting does not meet code with window egress.

i. Storage – Storage is inadequate and is an impediment to safety and the operation of this clinic. There is a lack of adequate storage for needed medical supplies, files, and equipment in this facility. There is minimal storage and mostly it is in the exam rooms. There is storage in rear entry, janitors, and mechanical rooms.

j. HC Toilet Facilities – A single toilet room serves patients and clinic staff. Toilet room did not meet all of the ADA or UPC requirements. Entry door width was too narrow, and the toilet and sink lacked sufficient clearances and were of incorrect fixture type.

k. Janitors Room – There is no exhaust air for the janitor's room as required by code. This room is used extensively as storage.

l. Office/Triage/Exam – The office/triage/exam room 7' x 9' combined into one room. It was barely large enough for the desk, copier, and fax let alone space required to accommodate patients. There is no sink in the room and therefore sanitation for patients was an issue. Privacy was very difficult. Note that electrical service is completely inadequate for the needs of the equipment.

m. Mechanical/Boiler room – The room is a small room for the furnace and systems. The access is via exam room is separated from the rest of the facility. The furnace is in very poor shape and all of the heating system is in poor condition. There is not the required clearance to combustibles (entry door swing) or space as required by code

n. Ancillary Rooms – There are no ancillary rooms as all space is used to maximum capacity including storage rooms, exam rooms, toilet rooms, office, waiting room, corridors, and vestibules.

3. Functional Design Issues

This facility is functionally inadequate for its intended use. The spaces do not meet the functional size requirement, access is non-compliant, and the ability to perform required medical functions within the facility is severely hampered by lack of storage.

4. Health Program Issues

   a. Vestibule and comfort:
   The front door of the clinic is through a non-compliant, unheated, vestibule, which is inadequate to defer the heat loss. There is no ADA access or proper gurney access. The exam rooms are cold every time the door is opened and the cold air migrates into the clinic where patients are being attended.

   b. Medical/Infectious Waste
   This is being handled in a very basic method and is hampered by the small non-functional facility.

   c. Infection Control
   This is being completed with minimal long-term control due to lack of facilities. Floor materials are very worn out and replaced with multiple materials and sizes allowing for control problems. There are no rubber base materials, and wall and ceiling materials are also considerably lacking in cleaning ability. The exposed piping also provides very unsanitary conditions and impossible cleaning of the exam rooms.

   d. Insect and Rodent Control
   None noted or investigated

   e. Housekeeping
   The difficulty in cleaning and housekeeping in such a congested facility is understandable and is being done at the best level currently possible.

5. Utilities
   a. Water Supply
   The city water is provided by the existing Water and Sewer system.

   b. Sewage Disposal
   Sewer system is provided by the city system to lagoon.

   c. Electricity
   See Electrical Narrative.

   d. Telephone
   A single phone line services the clinic and is inadequate for current needs.

   e. Fuel Oil
   The fuel system is not adequate with some leaking having occurred around the existing above ground tank. There is not protection or containment for possible spilling.

D. Architectural / Structural Condition

1. Building Construction:

    a. Floor Construction:
    The floor is 2x12 joist over a 6x9 glu-lam beams with treated post and pad foundation with 3 x 12 treated pad for foundation system. There is some settlement and heaving which has caused doors to stick and floor to be uneven. There is approximately 1 inches of differential in the floor elevations. There is batt insulation of the 2x12 joist space with 3/8" plywood soffit.

    b. Exterior Wall Construction:
    The walls are 2x6 construction at 24" oc with R-19 insulation. The sheathing is T-111 plywood siding painted and fiberglass batt insulation with vapor barrier and paneling plywood on the interior.

    c. Roof Construction:
    The roof is a full-span truss at 24" oc with plywood deck and metal roof. The insulation is R-38 batt insulation that is minimal in this climate and required upgrading to R-60.

    d. Exterior Doors:
    The exterior doors are hollow metal but very deteriorated. They are in very poor shape and need replacement.

    e. Exterior Windows:
    Windows are of thermo-pane wood casement windows; require thorough rework and repainting for upgrade to useful life..

    f. Exterior Decks, Stairs, and Ramps
    There are minimal Arctic entries. The landing at the exterior door is deteriorating, and the stairs rise and run do not meet code. The ramp is very steep and does not meet ADA and the handrails and landings do not meet code. Requires all new stairs, ramps, railings and landings.

2. Interior Construction:

    a. Flooring:
    The flooring is Sheet Vinyl over plywood. It has been replaced in many areas and is work out and covered with duct-tape in other areas. Entire replacement of sub-floor and finish is required to meet sanitary requirements.

    b. Walls:
    The walls are of 2x4 wood construction, with no sound insulation. The type of wall construction does not provide for patient privacy in any way. The finish is gypsum wallboard and in serious need of repair and repaint. There are many cracks in wallboard due to settlement and shifting building.

    c. Ceilings:
    The ceilings are gypsum wallboard as well and needing repair and repaint due to cracking as well.

d. Interior doors:
The interior walls are of hollow core wood construction that provides minimal construction durability and they are all in need of repair. Additionally, these doors are not acceptable for patient privacy and sound control. There has been floor shifting and most of the doors do not close properly.

e. Casework:
The upper casework is minimal and the lower casework is of very poor construction. Plastic laminate tops that do not fit to walls and are damaged. The sanitary issues are very significant with the counters being of such poor construction. Need full replacement.

f. Furnishings:
The furnishings are very old and worn. There is an old couch in the waiting room and a variety of mismatched and old desks, chairs, and tables for other use. The exam tables are older as well.

g. Insulation:

Floor Insulation		R-16 to R-19
Wall Insulation	R-19	
Attic/Roof Insulation		R-38
Attic Ventilation		minimal to NONE

h. Tightness of Construction:
The building is of poor overall construction, with numerous leaks in construction system at doors, floor, roof, and sills.

i. Arctic Design:
The vestibules are minimal, orientation is OK, and siting of the clinic is next to a large gully that probably needs additional fill.

3. Structural

a. Foundations
The foundation is post and pad over a gravel pad and is in poor structural condition. Pads have settled, walls are racked, and the building has floor level deviation and has substantial cracking on the interior. There not adequate hold down strapping and the bracing is loose or missing. In general the foundation needs substantial upgrade to new useful life or replacement.

b. Walls and Roof:
The walls and roof seem in relatively stable and adequate condition.

c. Stairs. Landings, and Ramps
These elements are in poor condition and need of replacement with signs of rotting and deterioration of structural elements.

E. Mechanical Condition

1. Heating System
   a. Fuel Storage and Distribution

The clinic's heating fuel oil storage tank is located adjacent to the building and not a minimum of 5 ft. as required by code. The 550-gallon storage tank does not have the proper venting, piping, or valving as required by code.

b. Fuel Storage and Distribution
The clinics heating fuel oil storage tanks are located adjacent to the building and not a minimum of 5 ft. as required by code. The 55-gallon storage barrels do not UL tank standards nor do they have the proper venting, piping, or valving as required by code.

c. Furnace
A single residential grade, oil-fired furnace provides heating for the entire clinic. The furnace is in poor shape with missing controls and duct systems to meet the needs of the Health Clinic. There is severe corrosion on the furnace stack and the vent assembly is in poor condition. There is no combustion air openings for the furnace which is against code. There are no additional heaters in the clinic to assist with heating.

d. Boiler
A single residential grade, oil-fired boiler provides heating for the entire clinic. The boiler is in fair shape with missing controls and systems to meet the needs of the Health Clinic. There is severe corrosion on the boiler stack and the vent assembly is in poor condition. There is no combustion air openings for the boiler which is against code. There are no additional heaters in the clinic to assist with heating.

e. Oil-Fired Heaters
Two residential grade, oil-fired, "Toyostoves" provides heating for the entire clinic. The heaters are in fair shape, but are not appropriate in providing the required heating needs of the Health Clinic. The combustion air openings for the heaters are provided in the intake and exhaust kits provided with the heaters.

f. Heat Distribution System
The piping has been rerouted in the clinic to avoid freezing and is exposed throughout the facility. Pipe insulation has been added which does not meet flame spread and smoke-developed ratings. The baseboard enclosures are all bent and broken. There are active piping leaks in the boiler room. The entire heating system is in need of replacement.

g. Oil-Fired Heaters
Two residential grade, oil-fired, "Toyostoves" provides heating for the entire clinic. The heaters are in fair shape, but are not appropriate in providing the required heating needs of the Health Clinic. The combustion air openings for the heaters are provided in the intake and exhaust kits provided with the heaters. An oil-fired furnace has been remove that once provided the heating needs of the clinic.

h. Heat Distribution System
The furnace supply air duct distribution system is routed through the attic space. The return air makes its way back to the furnace through the clinic rooms. The supply air diffusers and return grille are located in the ceiling.

2. Ventilation System
   a. System

There is no mechanical ventilation system. Ventilation is by operable windows. The windows do not open easily and as such do not provide effective ventilation. Some of the rooms do not have operable windows and as such have no ventilation.

b. Outside Air
Some of the rooms with operable windows have broken or missing operators so the windows cannot be opened.

c. System
There is no mechanical ventilation system. Ventilation is by operable windows. The windows do not open easily and as such do not provide effective ventilation.

d. Exhaust Air
A wall mounted exhaust fan services the toilet room. This fan is not ducted outside, but is ducted into the attic space. The janitor's room was not provided with an exhaust fan. The kitchen range is not provided with a code required range hood and exhaust fan.

e. Outside Air
Some of the rooms with operable windows have broken or missing operators so the windows cannot be opened.

3. Plumbing System
   a. Water System
   The water system plumbing is typical ½" and ¾" copper distribution piping to the clinic exam sinks and toilet fixtures.

   b. Sewer System
   City sanitary sewer provides the needs of the clinic.

   c. Fixtures
   The toilet room plumbing fixtures are not ADA approved or UPC code compliant for barrier free access. The janitor's sink is not provided with a code required vacuum breaker.

   d. Water Heater
   The water heater is installed on a combustible floor and the unit is only rated for installation on a non-combustible floor. The water heater has not been provide with a code required barometric damper nor is the relief valve piped to the floor.

   e. Water System
   There is no water system in the clinic. Water is stored in large cans for use by the occupants.

   f. Sewer System
   There is no sanitary sewer system in the clinic. A honey bucket is all that they have for the needs of the clinic.

   g. Fixtures
   There are plumbing fixtures in the clinic, but they are not connected or used.

h. Water Heater
A water heater is installed, but is not connected.

F. Electrical Condition

1. Electrical Service
   a. The building is served with 120/240V single-phase power by an overhead drop from the serving utilities power line (AVEC Meter #841648 SN 76928977 CL200 240V 3W).

   b. The service mast is used for support of the service-drop conductors and has not been adequately supported. The service mast conduit is substantially deformed and is detaching from the service entrance equipment. (NEC 230-28)

   c. The service entrance equipment consists of a combination meter/ main rated at 100A with 100A main circuit breaker as the combined over-current device and disconnecting means. At 1632 sq.ft. 100A 240V service is adequate for this building.

   Recommendation: Replace the service entrance mast and guy properly. MLL01

2. Power Distribution and Wiring System
   a. The MDP (Panel A) is a 20 circuit 125A MLO Sq.D. QO20L125. It has 3 spare spaces.

   b. The feeder to Panel A is #2 USE Cu Cable with a #10 Equipment Ground but no ground conductor. (NEC 250-122 Equipment Ground minimum size required #8 Cu)

   c. The kitchen / guestroom end of the building appears to be an addition and has its own panel (Panel B) which is a 10 circuit (no spares or spaces) Sq. D. QOC18Q. This panel is feed in conduit from a 50 amp 2 pole circuit breaker in Panel A using 2#6 Al conductors and a bare neutral conductor with no ground.

   d. Non-metallic sheathed cable (Romex) is used for the branch circuit wiring. Patient care areas need to be be wired in metal raceways. (NEC 336 and NEC 517-13(a) and (b))

   e. Clearance in front of panels is not being maintained. Shall not be used for storage. (NEC 110-26(b)) 30in in width, 6-1/2ft headroom

   f. Unused openings in boxes shall be closed (NEC 110-12(a))

   g. Securing and supporting of wiring (NEC 300-11)

   Recommendation: Because of multiple deficiencies, replace the feeders between the service main and Panel A and to Panel B. MLL02

   Completely replace the wiring system with at least MC Cable. MLL03

3. Grounding System

   Grounding of Electrical Systems

a. The service entrance equipment is grounded by a #8 solid cu grounding electrode conductor to a ground rod. It is bonded in the service meter main to the Neutral and the Equipment ground.

b. All of the neutrals and grounds are tied together in Panel A; effectively eliminating a functional grounding system. (NEC Article 250)

Grounding of Electrical Equipment

c. The metallic piping systems are not bonded. The interior metal water piping system shall be bonded (NEC 250-104)

d. The 40amp 2-pole range circuit from panel B has its ground wire clipped off. Frames or Ranges and Clothes Dryers (NEC 250-140)

e. Antenna systems grounding electrode shall be connected to the power grounding electrode system (NEC 820-40(d))

Recommendation: Install equipment grounding to metallic piping, antenna systems and replace range feeder. MLL04

4. Exterior Elements

a. A HID fixture provides exterior lighting at each man door. It does not have photocell or time-clock controls. Lighting is inadequate for ADA coverage on ramps.

b. No exterior power receptacles were installed. NEC 210-52(e)

Recommendation: Install 2 new HID floodlights with photocell controls. Install 1 new WP GFI 120V outlet. MLL05

5. Wiring Devices

The following problems were observed:

a. Some receptacles were wired incorrectly posing a health hazard. Open ground was discovered. All GFI operation is questionable as there is no proper grounding to this system.

b. GFCI protection required for receptacles installed in bathrooms and outdoors (NEC 210-8(b)). In residential areas also include all kitchen counters or within 6ft of wet bar sink s edge. (NEC 210-8(a))

c. The circuit feeding the office is reported to be overloaded and trips often.

d. Receptacles are residential grounding type, not hospital grade. (NEC 517-18(b))

e. Interior device plates are non-metallic ivory decorative plates.

f. There are an inadequate number of receptacles. (NEC 210-52(a) 210-60) E.g. At some desks and sink counters there were none.

g. Dwelling unit / Guest Room receptacle locations (every 8ft etc) NEC 210-52

h. Recommendation: Completely replace all wiring devices and install additional where needed. MLL06

6. Lighting
   a. Foot candle measurements were taken and lighting levels do appear adequate in most areas. May be low in Exam Room 1 & 2 but this could be corrected by replacing burned out lamps. All rooms require lighting (UBC 1202.1) Recommended levels of the Illuminating Engineering Society Standards.

   b. The lighting is predominately 4 ft fluorescent T12 (2) lamp surface mounted wrap diffuser fixtures. Inefficient F40 Rapid Start lamps. Many lamps burned out. Fixture age and condition makes assumption of PCB ballasts probable. Lens cracked, broken, dirty and stained. Support rooms are incandescent type A19 lamped fixtures.

   c. Bathroom ceiling fan/lights hanging down from ceiling.

   d. One switch cover is missing. Switch in storage room in wrong part of room because of remodel. Needs to be relocated.

   Recommendation: Replace all fixtures. Fix switching. MLL07

7. Emergency System
   a. Emergency Exit signs appeared to be non-functioning or expired self-luminous types. Means of Egress Identification “Exit Signs” - Connected to emergency electrical system providing 1-1/2 hours of continuous illumination. (UBC 1003.2.8)

   b. Egress Lighting. There are no emergency egress lights installed. There was one battery-powered emergency light for task illumination in the large exam room. Means of Egress Illumination. To an intensity of not less then 1FC. (UBC 1003.2.9)

   Recommendation: Install new emergency exit signs and egress lighting. MLL08

8. Fire Alarm System
   a. The building has a manual fire alarm installed but it is turned off and reported not functional. There is no control panel.

   b. Battery operated smoke detectors (3) are installed in the guest room / kitchen end of the building but also deactivated.

   c. Units and sleeping areas require visual alarm. (ADA 4.28.4) Restrooms, general usage areas, hallways, lobbies require audible and visual alarms (ADA 4.28) Also UBC 1105.4.5)

   Recommendation: Remove the existing system. Replace with new smoke detectors in sleeping room, kitchen and adjacent corridors. Install both audible and visible annuciators. Install a manual station near the exits. MLL09

9. Telecommunications
    a. Telephone service enters at a weatherproof protection test block (UUI 08327) on the exterior of the building. Telephone service is provided by United Utilities

    b. There is a telephone switch installed in the office (Samsung Prostar 816+) and it served telephone outlets in the office and the 3 exam rooms.

    c. The building is not wired for Computer local area network (Cat 5). (EIA/TIA)

    Recommendation: install a complete prewired Cat 5 telecom distribution for both data and voice needs. MLL09

10. Energy Management
    a. Several areas have inefficient incandescent lighting. Many areas could use occupancy sensors for energy management. Exterior lighting could use photocell control.

    Recommendation: Replace fixtures, install occupancy sensors and photocells. This recommendation is covered by MLL07.

G. Civil / Utility Condition

1. Location of building
    a. Patient Access
    Located in the relative center of the village for ease of access and seems to work fine. It is on the road to the airport which is an advantage.

    b. Service Access
    Road access is provided to front and rear entry. Neither stair access to rear, nor ramp and stairs to front entry meet code access requirements. Ramps are excessively steep providing a slipping hazard in winter months.

    c. Other Considerations:
    The facility is located next to river bank which is steep and does not allow for expansion. The property lines are also very close to the building and not to code requirements. This requires some filling in the long term for any expansion of the facility.

2. Site Issues
    a. Drainage
    Drainage from the site is adequate. There is a significant pad on which the building is constructed. Correction would include putting a new extended pad on the site prior to placing the post and pad system.

    b. Snow
    There does not appear to be a snow-drifting problem as the facility sits in the open.

3. Proximity of adjacent buildings

There are adjacent buildings that are two close for code and would require 1 hr. exterior walls on both buildings to meet code. There is not adequate space for any expansion on the current site.

4. Utilities
   a. Water Supply
      The new city water supply provides adequate water for the facility.

   b. Sewage Disposal
      Sewage disposal is provided by City system.

   c. Electricity
      Power from Village system via overhead wire. See Photos

   d. Telephone
      Overhead phone with only one phone connection, requiring fax and phone on same line.

H. Existing Facility Floor Plan (Site Plans, New Clinic Plans, Regional Map):

We have attached drawings, as we have been able to identify, find, or create as part of this report. We have endeavored to provide all drawings for all the sites; however, in some cases exact existing site plans were not available. We have provided as indicated below:

A1.1 Existing Site Plan is attached if available

A1.2 Existing Facility Floor Plan is attached following.

A1.3 The Existing typical wall section is attached following as required by the report guidelines.

A2.1 The Addition to the Existing Facility as required to meet ARPCF Space Guidelines is attached following.

A3.1 The New Clinic Site plan is attached as proposed based on the community input.

A3.2 The New Denali Commission Clinic Floor Plan meeting the ARPCF Space Guidelines and proposed for this location is attached.

IV. Deficiency Evaluation

A. Deficiency Codes:

The deficiencies are categorized according to the following deficiency codes to allow the work to be prioritized for funding. The codes are as follows:

01 Patient Care: Based on assessment of the facilities ability to support the stated services that are required to be provided at the site. Items required for the patients social environment such as storage, privacy, sensitivity to age or developmental levels, clinical needs, public telephones and furnishings for patient privacy and comfort.

02 Fire and Life Safety: These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated life safety aspects of building codes including the Uniform Building Code, International Building Code, The Uniform Fire Code, NFPA 101, The Uniform Mechanical and Plumbing Codes and The National Electrical Code. Deficiencies could include inadequacies in fire barriers, smoke barriers, capacity and means of egress, door ratings, safe harbor, and fire protection equipment not covered in other deficiency codes.

03 General Safety: These deficiencies identify miscellaneous safety issues. These are items that are not necessarily code items but are conditions that are considered un-safe by common design and building practices. Corrective actions required from lack of established health care industry safety practices, and local governing body code safety requirements. I.e. Occupational Safety Health Administration (OSHA) codes & standards.

04 Environmental Quality: Deficiencies based on Federal, State and Local environmental laws and regulations and industry acceptable practices. For example this addresses DEC regulations, hazardous materials and general sanitation.

05 Program Deficiencies: These are deficiencies that show up as variations from space guidelines evaluated through industry practices and observation at the facility site and documented in the facility floor plans. These are items that are required for the delivery of medical services model currently accepted for rural Alaska. This may include space modification requirements, workflow pattern improvements, functional needs, modification or re-alignment of existing space or other items to meet the delivery of quality medical services. (Account for new space additions in DC 06 below)

06 Unmet Supportable Space Needs: These are items that are required to meet the program delivery of the clinic and may not be shown or delineated in the Alaska Primary Care Facility Space Guideline. Program modifications requiring

additional supportable space directly related to an expanded program, personnel or equipment shall be identified in this section; for example additional dental space, specialty clinic, storage, or program support space that requires additional space beyond the established program.

07 Disability Access Deficiencies: The items with this category listing are not in compliance with the Americans with Disabilities Act. This could include non-compliance with accessibility in parking, entrances, toilets, drinking fountains, elevators, telephones, fire alarm, egress and exit access ways, etc.

08 Energy Management: These deficiencies address the efficiency of lighting, heating systems/fuel types and the thermal enclosures of buildings, processes, and are required for energy conservation and good energy management.

09 Plant Management: This category is for items that are required for easy and cost efficient operational and facilities management and maintenance tasks of the physical plant.

10 Architectural M&R: Items affecting the architectural integrity of the facility, materials used, insulation, vapor retarder, attic and crawlspace ventilation, general condition of interiors, and prevention of deterioration of structure and systems.

11 Structural Deficiencies: These are deficiencies with the fabric of the building. It may include the foundations, the roof or wall structure, the materials used, the insulation and vapor retarders, the attic or crawl space ventilation and the general condition of interior finishes. Foundation systems are included in this category.

12 Mechanical Deficiencies: These are deficiencies in the plumbing, heating, ventilating, air conditioning, or medical air systems, interior mechanical utilities, requiring maintenance due to normal wear and tear that would result in system failure.

13 Electrical Deficiencies: These are deficiencies with normal or emergency power, electrical generating and distribution systems, interior electrical and communications utilities, fire alarm systems, power systems and communications systems within a building that should be repaired or replaced on a recurring basis due to normal wear and tear that would otherwise result in system failure.

14 Utilities M&R: This category is used for site utilities for incoming services to facilities that are required for the building to be fully operational. Deficiencies may include sewer and water lines, water wells, water tanks, natural gas and propane storage, electric power and telecommunications distribution, etc.

15 Grounds M&R: Real property grounds components that should be replaced on a recurring basis due to normal wear and tear. Deficiencies with respect to trees, sod, soil erosion, lawn sprinklers, parking, bridges, pedestrian crossings, fences, sidewalks & roadways, and site illumination etc. are considerations.

16 Painting M&R: Any painting project that is large enough to require outside contractors or coordination with other programs.

17 Roof M&R: Deficiencies in roofing, and related systems including openings and drainage.

18 Seismic Mitigation: Deficiencies in seismic structural items or other related issues to seismic design, including material improperly anchored to withstand current seismic requirements effect. The elements under consideration should include the cost incidental to the structural work like architectural and finishes demolition and repairs.

B. Photographs:

We have provided photographs attached which are noted to describe the various deficiencies described in the narratives and itemized in the summary below. The photos do not cover all deficiencies and are intended to provide a visual reference to persons viewing the report who are not familiar with the facility.

We have included additional photos as Appendix B for general reference. These are intended to add additional information to the specific deficiencies listed and to provide general background information.

C. Cost Estimate General Provisions

1. New Clinic Construction

a. Base Cost: The Base Cost provided in Section VI of this report is the direct cost of construction, inclusive of general requirements (described below) and contingency for design unknowns (an estimating contingency). The base cost is exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The Project Factors and Area Cost Factor are multipliers of the base costs.

- General Requirements are based on Anchorage costs without area adjustment. It is included in the Base Cost for New Clinics. These costs are indirect construction cost not specifically identifiable to individual line items. It consists of supervision, materials control, submittals and coordination, etc. The general requirements factor has not been adjusted for Indian Preference.
- The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned.

b. Project Cost Factors

- Equipment Costs for new medical equipment has been added at 17% of the cost of new floor space.
- Design Services is included at 10% to cover professional services including engineering and design.
- Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
- Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.

c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.

d. Estimated Total Project Cost of New Building: This is the total estimated cost of the project, including design services. The construction contract will be work subject to Davis Bacon wages, and assumes construction before year-end 2002. No inflation factor has been applied to this data.

2. Remodel, Renovations, and Additions

a. Base Cost: The Base Cost provided in the specific deficiency sheets is the direct cost of construction, exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis

Bacon wages, regionally adjusted to Anchorage. Most of the deficiency items do not constitute projects of sufficient size to obtain efficiency of scale. The estimate assumes that the projects are completed either individually, or combined with other similar projects of like scope. The numbers include moderate allowances for difficulties encountered in working in occupied spaces and are based on remodeling rather than on new construction costs. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The General Requirements, Design Contingency and Area Cost Factors are multipliers of the base costs.

- The cost of Additions to clinics is estimated at a unit cost higher than new clinics due to the complexities of tying into the existing structures.
- Medical equipment is calculated at flat rate of approximately $32 which is the same amount as used for Equipment for New Clinic Construction. It is is included as a line item in the estimate of base costs.

b. General Requirements Factor: General Requirements Factor is based on Anchorage costs without area adjustment. The factor is 1.20. It is multiplied by the Base Cost to get the project cost, exclusive of planning, architecture, engineering and administrative costs. This factor assumes projects include multiple deficiencies, which are then consolidated into single projects for economies of scale. The general requirements factor has not been adjusted for Indian Preference.

c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.

d. Contingency for Design Unknowns (Estimating Contingency): The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned. The factor used is 1.15.

e. Estimated Total Cost: This is the total estimated bid cost for work completed under Davis Bacon wage contracts, assuming construction before year-end 2002. This is the number that is entered in the front of the deficiency form. No inflation factor has been applied to this data.

f. Project Cost Factors: Similar to new clinics, the following project factors have been included in Section VI of this report.

- Design Services is included at 10% to cover professional services including engineering and design.
- Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
- Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.

g. Estimated Total Project Cost of Remodel/Addition: This is the total estimated cost of the project including design services, the construction contract cost for work completed under Davis Bacon

wages and assuming construction before year-end 2002. No inflation factor has been applied to this data.

V. Summary of Existing Clinic Deficiencies

The attached sheets document the deficiencies; provide recommendations on how to make repairs or accommodate the needs and provide a cost estimate to accomplish the proposed modifications. The summary addresses individual deficiencies. If all deficiencies were to be addressed in a single construction project there would be cost efficiencies that are not reflected in this tabulation.

These sheets are reports from the Access Data Base of individual Deficiencies that are compiled on individual forms and attached for reference.

Refer to Section VI. New Clinic Analysis for a comparison of remodel/addition to new construction.

VI. New Clinic Analysis

The analysis of whether a new clinic is required is based on the Denali Commission standard of evaluation that "New Construction is viable if the cost of Repair/Renovation and Addition exceeds 75% of the cost of New Construction".

We have therefore determined the cost of a New Clinic Construction to meet the Alaska Rural Primary Care Facility (ARPCF) Space Guidelines for the size of village. We have also determined the cost to Repair/Renovation and Addition to the existing Clinic to meet the same ARPCF Space Guidelines.

A. The cost of a New Denali Commission 2000 SF Medium Clinic in Marshall is projected to be:

• Base Anchorage Construction Cost per sf.			$183
• Project Cost Factor:		@ 45%	$ 82
Medical Equipment	17%		
Construction Contingency	10%		
Design Fees	10%		
Construction Administration	8%		
• Multiplier for Village		@ 1.30	$ 80
Adjusted Cost per SF			$345

Projected Cost of a New Clinic: 2000 sf. X $345 = $690,000

B. The cost of the Repair/Renovation and Additions for the existing Clinic are projected to be:

• Code & Condition Repairs/Renovations			
Cost from Deficiency Summary			$493,736
• Remodel/Upgrade work (See Def. Code 01)			
100% of clinic 1720 SF = 1720 SF @ $100/SF			$171,791
• Additional Space Required by ARPCF – (See Def. Code 06)			
o Base Anchorage Cost		$226	
Medical Equipment		$ 32	
Additional Costs –		$ 98	
General Requirements	20%		
Estimation Contingency	15%		
o `Multiplier for Village	@1.30	$107	
Adjusted Cost per SF		$463	
Total Addition Cost of 280 SF @ $463			$129,670
• Project Cost Factor:	@ 28%		$222,655
Construction Contingency	10%		
Construction Administration	8%		
Design Fees	10%		

Total cost of remodel/addition $1,017,852

C. Comparison of Existing Clinic Renovation/Addition versus New Clinic:

Ratio of Renovation/Addition versus New Clinic is:
$1,017,852 / $690,000 = 1.48 x cost of New Clinic

Based on Denali Commission standard of evaluation; the remodel/addition costs are more than 75% of the cost of new construction. A new clinic is recommended for this community.

* Note: Village factors may have been adjusted for recent 2001 cost adjustments and may have changed from previously published data distributed to the villages.

D. Overall Project Cost Analysis:

The overall project cost analysis below incorporates land, multi-use, utility costs, and road access costs, and project management fees if any are associated with the project.

Item	Quantity	Units	Unit Cost	Area Adjustment Factor	Total Cost	Allowable under "Small" Clinic Process (yes/no)
Primary Care Clinic (Allowable)	2000	SF	$265.00	1.3	$689,000	yes
Clinic (Non-allowable portion)	0	SF	$265.64	1.3	$0	no
Land	15,000	SF	$2.00	1	$30,000	yes
Multi-Use Facility Design Cost	0	LS	$0.00	1	$0	yes
Multi-Use Facility Construction Cost	0	LS	$0.00	1	$0	no
Utility Extension/Improvements	1	LS	$15,000	1	$15,000	yes
Road access & parking lot improvements	1	LS	$5,000	1	$5,000	yes
Subtotal Project Cost					$739,000	
Project Management Fees					Unknown	
Total Project Cost					**Unknown**	

VII. Conclusions and Recommendations

The existing Marshall Clinic has served the community well for many years. Base on current ANTHC and YKHC delivery model for health care to rural Alaska, the facility is not adequate in size or in condition to meet these needs. The existing structure could be adapted for many other less clinical and medically stringent uses without extensive remodeling.

After careful review it is the recommendation of the consultant team that a new Denali Commission 2000 SF Medium Clinic be considered for Marshall. The addition of approximately 280 sf of clinic space required by the current ARPCF Program Space Guidelines and the major renovation and upgrading of the existing clinic space will cost 1.48 times the cost of a new clinic. This results in the recommendation of a new clinic for this village.

We reviewed the options with the local community leaders the consensus was that the New Medium Clinic would meet the current community needs and for years to come. In addition, they agreed that there are two possible sites that are available for construction of a new clinic. All of these sites are adjacent to all existing city utilities.

The community believes this is a good solution and will produce the best return for funds invested in a clinic that meets the needs of Marshall Community and is aggressively moving to assist in any way to accomplish this goal.

Appendix A: Specific Deficiencies Listings

The attached sheets represent the individual deficiencies identified for this project and the corrective action required to meet current codes and standards of construction. The deficiencies are further summarized in Section V. Summary of Existing Clinic Deficiencies.

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